Abigail Cullen

acullen@uoregon.edu

Education

2020-present **Postdoctoral Scholar**
University of Oregon, *Eugene, OR*

2020 **Doctorate of Exercise Physiology**
Florida State University, *Tallahassee, FL*

2016 **Undergraduate Bachelor of Science: Biochemistry**
Minors: Biology and Mathematics
Florida State University, *Tallahassee, FL*

Awards

2018-2019 Dr. Ava D. Rodgers Endowed Scholarship

2019 Service to the Graduate Student Advisory Council Award

Current Memberships

American Heart Association (AHA)

American Society for Nutrition (ASN)

American Society for Gravitational and Space Research (ASGSR)

Microcirculatory Society (MCS)

Refereed Presentations at Conferences

Cullen, A., Ismaeel, A., Koutakis, P., and Salazar,G.
Adiponectin And The Regulation Of Vascular Smooth Muscle Cell Phenotype. Abstract accepted at: AHA Scientific Sessions, 2019 November 16-18; Philadelphia, PA.

Ghosh, P., Cullen, A.E., Park, H., Goldsmith, J., Maraj, J.J., Evanson, K., Zawieja, D.C., Behnke, B.J., and Delp M.D., *Jugular Vein Demonstrate Enhanced Constriction Following Spaceflight in Mice.* Abstract presented at: The Gateway to Mars. NASA Human Research Program Investigator's Workshop; 2018 January 23-25; Galveston, TX.

Carnevale KJF, Muroski ME, Cullen AE, Morgan TJ, Kenworthy RN, Zorio DAR, Levenson CW, and Strouse, GF. *Peptide-Mediated Nanoparticle Uptake for Targeted Cancer Therapy*. Poster presented at: Florida State University Life Sciences Symposium. 2015 February; Tallahassee, FL.

Cullen, A., Purcell, S., and Prado, C. *Body Composition in Patients with Hip or Knee Osteoarthritis*. Poster presented at; The Florida State University Women in Math, Science, and Engineering Poster Presentation. 2014 May; Tallahassee, FL.

Publications

Nutrients — Cullen, A., Centner, A., Deitado, R., and Fernandez, J. The Role of Dietary and Pharmaceutical Interventions in the Development and Progression of Atherosclerosis. Nutrients 2019.

Journal of Nutritional Biochemistry — Serino, A., Zhao, Y., Hwang, J., Cullen, A., Deeb, C., Akhavan, N., Arjmandi, B., and Salazar, G. Gender Differences in the Effect of Blackberry Supplementation in Vascular Senescence and Atherosclerosis in ApoE$^{-/-}$ mice. Journal of Nutritional Biochemistry, 2019.

Autophagy — Salazar, G., Cullen, A., Huang, J., Zhao, Y., Serino, A., Hilenski, L., Patrushev, N., Forouzandeh, F., and Hwang, HS. SQSTM1/p62 and PPARGC1A/PGC-1alpha at the Interface of Autophagy and Vascular Senescence. *Autophagy*, 2019. https://doi.org/10.1080/15548627.2019.1659612

Manuscripts in Preparation

Circulation Research — Hwang, J., Zhao, Y., Cullen, A., and Salazar, G. Downregulation of SQSTM1/p62 accelerates vascular senescence by increasing Nox4 function. Circulation Research, 2019

TBD — Cullen, A., and Salazar, G. Adiponectin Regulation of EGFR Mediates Phenotypic Switch in Vascular Smooth Muscle Cells.

Research and Teaching Experience

2019-2020 **Graduate Research Assistant; Salazar Lab,** *Florida State University*

- Culture vascular smooth muscle cells for experiments studying mechanisms of cell signaling.
- Establish breeding pairs and run genotyping to grow required genetic lines for experimentation.
- Perform biochemical techniques such as western blots, PCR, zymography, and silver staining.

2017-2018 **Graduate Research Assistant; Delp Lab,** *Florida State University*

- Performed pressure myography and drug protocols on jugular vein, carotid artery, and cerebral basilar artery from mice flown on the International Space Station.

2013-2015 **Undergraduate Research Assistant; Levenson Neuroscience Lab,** *Florida State University*

- Aided graduate students with data analysis of peptide-mediated nanoparticle uptake cell count.
- Performed survival cranial surgery on rats and ran post-op behavioral tests including novel object interactions, open field, cross maze, and Morris water maze tests.

2013 **Undergraduate Research Assistant; Tozer Condensed Matter Lab,** *National High Magnetic Field Laboratory*

- Formed carbon fiber nanotubes for probes studying the Fermi surface of metals.

2015 **Teaching Assistant,** *Florida State University Department of Chemistry*

- Lectured two classes weekly prior to performing chemistry experiment.
- Trained in containing chemical spills.
- Graded 200+ lab reports weekly.

2015-2016 **Student Athlete Tutor,** *Florida State University Student Athlete Academic Services*

- Instructed student athletes in one-on-one and group tutoring for statistics, biology, chemistry, and calculus courses.
- Reported compiled student growth charts throughout semester to supervisors.

Laboratory and Scientific Techniques

- Breeding, genotyping, and tissue collection in mice
- Traumatic brain injury survival surgery and behavioral testing in rats
- Biochemical Techniques such as Western Blot, Polymerase Chain Reaction, SDS-PAGE, Bicinchoninic Acid (BCA) assay, Enzyme Activity Assay, Restriction Enzyme Analysis, and Enzyme Linked Immunosorbent Assay (ELISA)
- Analysis of contractility status in carotid arteries, jugular veins, and coronary arteries of rats
- Design of media for lysozyme protein purification and crystallization
- Spectroscopic techniques such as Nuclear Magnetic Resonance (NMR), Infrared, and Ultraviolet-visible spectroscopy
- Optical and Mass Spectrometry
- Immunohistochemistry (IHC)
- Vascular surgical techniques such as brain vessel cannulation, and jugular vein and carotid artery cannulation
- Tissue processing techniques such as profusion, brain removal, cryostat and microtome brain slicing, tissue staining and appropriate biological safety techniques